

CHAPTER 25

WIND ENERGY SYSTEMS AND FACILITIES

SECTION:

[10-25- 1: Purpose.](#)

[10-25- 2: Definitions.](#)

[10-25- 3: Requirements—Wind energy system, small.](#)

[10-25-4: Requirements—Wind energy system, commercial.](#)

[10-25- 5: Requirements of wind monitoring tower and equipment \(met tower\).](#)

[10-25- 6: Nonuse.](#)

[10-25- 7: Applicability.](#)

10-25-1 Purpose: The purpose of this chapter is to establish minimum requirements and regulations for the placement, construction and modification of small wind energy systems, commercial wind energy systems, and wind metering towers and equipment, as defined herein, while promoting the safe, effective and efficient use of such systems. (Ord. 2 § 2 (part), 2009)

10-25-2 Definitions:

TOTAL HEIGHT: The distance measured from ground level to the blade extended at its highest point (tower and turbine combined).

TOWER: The supporting structure on which the turbine and accessory equipment are mounted.

TURBINE: That portion of the wind system which includes the blades, generator and tail.

COMMERCIAL WIND ENERGY SYSTEM: A wind energy conversion system consisting of one or more wind turbine(s) and tower(s), with associated control or conversion electronics which will be used for on-site and/or off-site consumption of power with a rated capacity in excess of one hundred kW.

SMALL WIND ENERGY SYSTEM: A wind energy conversion system consisting of a wind turbine, a tower and associated control or conversion electronics with a rated capacity appropriate to the on-site electric usage of the end use and which will be used primarily to reduce on-site consumption of utility power (limited to one per lot or parcel, or up to four on agricultural properties with twenty acres or more—systems with multiple

towers may cluster towers/facilities together). A small wind energy system shall not exceed a rated capacity of one hundred kW.

WIND MONITORING
TOWER AND
EQUIPMENT (MET
TOWER):

A temporary tower housing or supporting wind measuring equipment such as an anemometer for the purpose of establishing the viability of wind-generated energy by measuring and monitoring wind velocity, duration, intensity, regularity, etc. (Ord. 2 § 2 (part), 2009)

10-25-3 Requirements—Wind energy system, small.

A. Permitted Locations. A small wind energy system is permitted as described in Section 17.16.030, Table of Uses, Washington County zoning ordinance. A small wind energy system is not permitted in a subdivision recorded with the Washington County Recorder and zoned R-5 or A-20 unless a private occupied residence exists on the same lot.

B. Minimum Lot Size. No wind energy system shall be erected on any lot less than five acres in size.

C. Total Height. For property sizes of five acres or less, the total height shall not exceed seventy-five feet. For property sizes of greater than five acres but less than twenty acres, the total height shall not exceed one hundred feet. For property sizes of twenty acres or greater, the total height shall not exceed one hundred twenty-five feet.

D. Location. No small wind energy system shall be located in any front or side yard.

E. Setbacks.

1. Property Lines. A small wind energy system tower shall be set back from the nearest property line, public road right-of-way, tanks containing combustible/flammable liquids, other wind energy towers, and aboveground communication or electrical line not less than 1.5 times its total height.

2. Inhabitable or Public Structures. A small wind energy system shall be set back from the nearest inhabitable structure (residence) or public building or gathering place (i.e., church, hospital, school, library, park, playground, etc.), not less than 1.5 times its total height.

F. Design Standards.

1. Pole or Tower Design. The design of the small wind energy system shall be of a monopole or freestanding design or guy wired tower.

2. Minimum Blade Height. The minimum height of the lowest extent of a turbine blade shall be thirty feet above the ground or fifteen feet above any structure or obstacle within the fall zone of the tower.

3. Safety/Access.

a. No tower shall have a climbing apparatus within twelve feet of the ground. All access doors or access ways to towers and electrical equipment shall be locked.

b. Appropriate warning signage shall be placed on towers, electrical equipment and wind energy system entrances.

4. Noise. No small wind energy system shall exceed sixty dBA as measured at the property line or fifty dBA as measured at the nearest neighboring inhabitable building. All small wind energy systems must have a manufacturers' maximum RPM (revolutions per minute) rating of less than five hundred.

5. Visual Appearance.

a. Small wind energy systems shall be finished and maintained as manufactured.

b. No small wind energy system shall be lighted unless required by the Federal Aviation Administration (FAA).

c. No advertising signs of any kind or nature whatsoever shall be permitted on any small wind energy system.

d. The design of any buildings or related structures shall, to the extent reasonably possible, use materials, colors, textures, screening and landscaping that will blend the facility into the natural setting and existing environment.

e. Appropriate landscaping shall be provided to screen accessory structures from roads and adjacent residences.

6. Electrical Interconnections. All electrical interconnection or distribution lines shall be underground and comply with all applicable codes and public utility requirements.

7. Signal Interference. Efforts shall be made to site small wind energy systems to reduce the likelihood of blocking or reflecting television and other communication signals. If signal interference occurs, both the small wind energy system owner and individual receiving interference shall make reasonable efforts to resolve the problem. No small wind energy system shall cause permanent and material interference with television or other communication signals.

8. Overspeed Controls. Every small wind energy system shall be equipped with an automatic overspeed control and a manual brake.

9. Fire Protection. All wind energy systems shall have a defensible space for fire protection in accordance with the **Washington** County Wildland-Urban Interface Code.

G. Permit Applications. Application for a wind energy system shall include the following information:

1. Site plan to scale showing the location of the proposed wind energy system and the locations of all existing buildings, structures and property lines along with distances, including, a drawing depicting the area and procedure required for raising and lowering the tower, and identifying the fall zone for the total height of the tower and equipment;

2. Elevations of the site to scale showing the height, design and configuration of the wind energy system and the height and distance to all existing structures, buildings, electrical lines and property lines;

3. Standard drawings and an engineering analysis of the systems tower, including weight capacity;

4. A standard foundation and anchor design along with soil conditions and specifications for the soil conditions at the site;

5. Specific information on the type, size, rotor material, rated power output, performance, safety and noise characteristics of the system, including the name and address of the manufacturer, model;
6. Emergency and normal shutdown procedures, including the operation of a manual brake;
7. A line drawing of the electrical components of the system in sufficient detail to establish that the installation conforms to all applicable electrical codes;
8. Evidence that the provider of electrical service of the property has been notified of the intent to install an interconnected electricity generator, unless the system will not be connected to the electricity grid. If applicable, prior to final approval, the applicant shall provide evidence that the net-metering interconnection application has been applied for, or:
 - a. A work order number from the utility company has been acquired (for net-metering), and/or
 - b. Proof that an application for tax credit or rebate has been submitted to the state of Utah or applicable utility. (Ord. 2 § 2 (part), 2009)

10-25-4 Requirements—Wind energy system, commercial.

A. Permissible Locations. A commercial wind energy system may be permitted as described in Section 17.16.030, Table of Uses, Washington County zoning ordinance.

B. Minimum Parcel Size. No commercial wind energy system shall be erected on any parcel smaller in size than is required to contain the entire fall zone of the tower and equipment on the same parcel, unless applicable adjacent parcels are also a part of the wind energy system (adequate to provide for the entire fall zone—total height times 1.5—required by the established setbacks).

C. Total Height. The total height of a commercial wind energy system shall not exceed the height prescribed in the conditions established in the required conditional use permit.

D. Setbacks.

1. Project Boundary Lines. A commercial wind energy system tower shall be set back from the nearest project boundary line, public road right-of-way, tanks containing combustible/flammable liquids, other wind energy towers, and aboveground communication or electrical lines, not less than 1.5 times its total height. All property within the project boundary must be included in a recorded easement(s) or consent agreement(s) specifying the applicable uses for the duration of the project.

2. Other Uses. No commercial wind energy system shall be located within one-half of a mile of a platted subdivision, park, church, hospital, school or playground.

E. Design Standards. A commercial wind energy system shall comply with the design standards set forth below. A commercial wind energy system shall demonstrate that structure location and siting will not result in undesirable shadow flicker on an adjacent property/structure.

1. Pole or Tower Design. The design of the commercial wind energy system shall be of monopole or freestanding design with no guy wired towers.

2. Minimum Blade Height. The minimum height of the lowest extent of a turbine blade shall be thirty feet above the ground or fifteen feet above any structure or obstacle within the fall zone of

the tower.

3. Safety/Access.

- a. No tower shall have a climbing apparatus within twelve feet of the ground. All access doors or access ways to towers and electrical equipment shall be locked.
- b. Appropriate warning signage shall be placed on towers, electrical equipment and wind energy system entrances.

4. Noise. No commercial wind energy system shall exceed the manufacturers rated dBA as measured at the property line or as measured at the nearest neighboring inhabitable building. Manufacturers' specifications for both RPM (revolutions per minute) ratings and maximum noise levels shall be used to evaluate the noise level maximum requirements as a condition established in the required conditional use permit.

5. Visual Appearance.

- a. Commercial wind energy systems shall be finished and maintained in color and material as manufactured.
- b. No commercial wind energy system shall be lighted unless required by the Federal Aviation Administration (FAA).
- c. No advertising signs of any kind or nature whatsoever shall be permitted on any commercial wind energy system.
- d. The design of any buildings or related structures shall, to the extent reasonably possible, use materials, colors, textures, screening and landscaping that will blend the facility into the natural setting and existing environment.
- e. Appropriate landscaping shall be provided to screen accessory structures from roads and adjacent residences.

6. Electrical Interconnections. All electrical interconnection or distribution lines within the project boundary shall be underground, unless determined otherwise by the planning commission because of unusual site conditions, and comply with all applicable codes and public utility requirements. Overhead transmission lines may be permitted as they come to a common area such as a substation and/or leave the location of the towers and energy generation system/equipment to off-site destinations.

7. Signal Interference. Efforts shall be made to site commercial wind energy systems to reduce the likelihood of blocking or reflecting television and other communication signals. If signal interference occurs, both the commercial wind energy system owner and individual receiving interference shall make reasonable efforts to resolve the problem. No commercial wind energy system shall cause permanent and material interference with television or other communication signals.

8. Fire Protection. All wind energy systems shall have a defensible space for fire protection in accordance with the **Washington** County Wildland-Urban Interface Code.

F. Permit Applications. A commercial wind energy system shall comply with the permit application requirements set forth in Section **10-25-3.(G)(1) through (8)**, Permit Applications, and provide information specified in subsections (G)(1) through (16), Conditional Use Permit, of this section.

G. Conditional Use Permit. Following the provisions of [Chapter 10-18, Washington County Code](#), additional or more thorough consideration shall be given to the following:

1. Project rationale (time frame, project life, development phases, likely markets for the generated energy, and possible future expansions);
2. Siting considerations (avoid areas/locations with a large potential for biological conflict such as wilderness study areas, areas of critical environmental concern, county and state parks, historic trails, special management areas or important wildlife habitat; avoid visual corridors that are essential view sheds or scenic areas designated by the county after analyzing the applicant's wind energy system and considering public hearing comments; avoid areas of erodible slopes and soils, where concerns for water quality and high storm runoff potential have been identified, and known sensitive historical, cultural or archeological resources and public safety concerns mentioned herein can best be avoided);
3. Site and development plans (drawn to scale; locating all structures existing and proposed, setbacks, access, project boundary, existing structures outside project boundary within one-half mile of project boundary, existing utilities/pipelines/transmission lines, proposed utility lines/structures, existing topography; map of proposed drainage/grading and natural vegetation removal plan; map of wind characteristics and dominant wind direction; map of floodplains or wetlands, and other items identified by county staff or planning commission);
4. Economic analysis (economic cost/benefit analysis describing generated property taxes, sales taxes, other taxes, construction dollars spent locally, estimated construction jobs and construction payroll, estimated permanent jobs and continuing payroll, and costs associated with impact on roads and other county infrastructure in the area);
5. Visual impacts, appearance and scenic view sheds (visual simulations providing vantage points considering a three hundred sixty degree view of the project site);
6. Wildlife habitat areas and migration patterns, including avian impacts (including endangered or threatened species, on the site and in a biologically significant area surrounding the site);
7. Environmental analysis in the absence of required state or federal agency review (impact analysis on historic, cultural and archaeological resources, soil erosion, flora in the project area, water quality and water supply in the area, dust from project activities, and cumulative impacts of other adjacent wind energy projects);
8. Solid waste or hazardous waste generated by the project;
9. Lighting and FAA height restrictions, including airport overlay proximity (air traffic safety);
10. Transportation plan for construction and operation phases (showing proposed project service road ingress and egress access onto the state or county road system, layout of wind energy system service road system and degree of upgrade plan to new and existing roads, anticipated volume and route for traffic, including oversized and heavy equipment needed for construction, maintenance and repairs, methodology of repairs and maintenance of roads and bridges used for the project, and related public pedestrian and vehicular access and associated fencing);
11. Public safety (potential hazards to adjacent properties, public roadways, communities, aviation, etc., that may be created);
12. Noise limitations (noise levels at the property line of the project boundary);
13. Shadow flicker and strobe effects (an evaluation of where and when any shadow flicker or

strobing effects may impact property within the project area and any adjacent properties potentially affected);

14. Telecommunications interference (electromagnetic fields and communications interference generated by the project);

15. Life of the project and final reclamation (describing the decommissioning and final land reclamation plan after anticipated useful life or abandonment or termination of the project, including evidence of an agreement with the property owner that ensures proper final reclamation of the wind energy project);

16. Others, as applicable.

(Ord. 2 § 2 (part), 2009)

10-25-5 Requirements of wind monitoring tower and equipment (met tower).

A. Permissible Locations. A wind monitoring tower may be located as described in Section **17.16.030, Table of Uses, Washington** County Code.

B. Permit Application. A temporary wind monitoring tower with associated equipment may be permitted and in accordance with Section **10-25-3.(C), and (F)(1) through (9)** of this chapter, subject to the following:

1. Owner consent: evidence that the applicant is the owner of the property or has written permission of the owner(s) to make such application;

2. Use duration: permitted for a maximum of three to five years as specified in the conditional use permit and as determined by evidence given at the time of application regarding known wind source data;

3. Height: the height of the facility will be established in the conditional use permit, unless it is located in an R-5 zone, wherein the met tower may not exceed one hundred feet total height;

4. Setbacks: the setbacks for a met tower from the closest property lines, public road right-of-way and aboveground communication or electrical line shall be at least 1.5 times total height. The met tower shall also maintain a clear fall zone from any occupiable building/structure and tanks containing combustible/flammable liquids, of 1.5 times the total height;

5. Tower security: any climbing apparatus must be located at least twelve feet above the ground, and the tower must be designed to prevent climbing within the first twelve feet. The tower is recommended to be enclosed with an appropriate fence with OHV or livestock use in the area; and

6. Other: as determined by county staff and/or planning commission. (Ord. 2 § 2 (part), **2009**)

10-25-6 Nonuse.

A. Any small wind energy system or commercial wind energy system which complies with the terms of this chapter which is not used for two years, excluding repairs, shall be removed within the following six months. Failure to remove the system shall be deemed a violation of this chapter.

B. Any small wind energy system or commercial wind energy system which is nonconforming and

which is not operable for one year shall be removed within the following six months. Failure to remove the system shall be deemed a violation of this chapter. (Ord. 2 § 2 (part), 2009)

10-25-7 Applicability. The requirements of this chapter shall apply to all small wind energy systems and commercial wind energy systems proposed after the effective date of the ordinance codified in this chapter. Wind energy systems for which a required permit has been properly issued prior to the effective date of the ordinance codified in this chapter shall not be required to meet the requirements of this chapter; provided, however, that any such system shall be installed and functioning within twenty-four months of the date of the permit. Any system that has been installed but not used for two consecutive years may not be subsequently used without meeting the requirements of this chapter. No preexisting system shall be altered in any manner that would increase the degree of nonconformity with the requirements of this chapter and no alterations shall be made to a nonconforming preexisting system during its life which exceed fifty percent of its fair market value. If such system is destroyed or damaged to the extent of more than fifty percent of its fair market value at the time of destruction or damage, it shall not be reconstructed except in conformity with this chapter. (Ord. 2 § 2 (part), 2009)